

Application No.10/659,062
Filed: September 10, 2003
TC Art Unit: 2879
Confirmation No.:3830

AMENDMENT TO THE CLAIMS

1. (Currently amended) A light-emitting diode for large current driving, comprising:

a metal substrate provided with a distribution circuit formed on the surface thereof and electrically insulated therefrom;

a through opening in the metal substrate;
a metal base having a portion positioned in the through opening and being directly attached to and thereby in thermally contact with said metal substrate, and provided with an LED chip mounted thereon;

a gold wire connecting said distribution circuit with said LED chip; and

a plastic lens attached over a surface of said metal substrate on which a surface said LED chip is mounted, said lens covering part of said metal base including at least said gold wire.

2. (Original) The light-emitting diode for large current driving according to claim 1, wherein a first through hole is formed in said metal substrate at least at one spot of which a location is corresponding to that of said plastic lens and said plastic lens is attached through said first through hole.

3. (Previously presented) The light-emitting diode for large current driving according to claim 1, wherein said metal base is

Application No.10/659,062
Filed: September 10, 2003
TC Art Unit: 2879
Confirmation No.:3830

attached to said metal substrate by means of caulking or press fitting.

4. (Previously presented) The light-emitting diode for large current driving according to claim 1, wherein said metal base is composed of copper.

5. (Previously presented) The light-emitting diode for large current driving according to claim 1, wherein said metal substrate is composed of copper or aluminum.

6. (Previously presented) The light-emitting diode for large current driving according to claim 1, wherein a space is formed on a rear of said plastic lens and between said plastic lens and said metal substrate to contain said LED chip, said gold wire and part of said metal base, and is filled with a silicone resin.

7. (Original) The light-emitting diode for large current driving according to claim 6, wherein at least one through hole is formed at a location in said metal substrate which corresponds to that of said space, and said silicone fills said space through said through hole.

8. (Previously presented) The light-emitting diode for large current driving according to claim 2, wherein said metal base is attached to said metal substrate by means of caulking or press fitting.

Application No.10/659,062
Filed: September 10, 2003
TC Art Unit: 2879
Confirmation No.:3830

9. (Previously presented) The light-emitting diode for large current driving according to claim 2, wherein said metal base is composed of copper.

10. (Previously presented) The light-emitting diode for large current driving according to claim 3, wherein said metal base is composed of copper.

11. (Previously presented) The light-emitting diode for large current driving according to claim 2, wherein said metal substrate is composed of copper or aluminum.

12. (Previously presented) The light-emitting diode for large current driving according to claim 3, wherein said metal substrate is composed of copper or aluminum.

13. (Previously presented) The light-emitting diode for large current driving according to claim 4, wherein said metal substrate is composed of copper or aluminum.

14. (Previously presented) The light-emitting diode for large current driving according to claim 2, wherein a space is formed on a rear of said plastic lens and between said plastic lens and said metal substrate to contain said LED chip, said gold wire and part of said metal base, and is filled with a silicone resin.

15. (Previously presented) The light-emitting diode for large current driving according to claim 3, wherein a space is

Application No.10/659,062
Filed: September 10, 2003
TC Art Unit: 2879
Confirmation No.:3830

formed on a rear of said plastic lens and between said plastic lens and said metal substrate to contain said LED chip, said gold wire and part of said metal base, and is filled with a silicone resin.

16. (Previously presented) The light-emitting diode for large current driving according to claim 4, wherein a space is formed on a rear of said plastic lens and between said plastic lens and said metal substrate to contain said LED chip, said gold wire and part of said metal base, and is filled with a silicone resin.

17. (Previously presented) The light-emitting diode for large current driving according to claim 5, wherein a space is formed on a rear of said plastic lens and between said plastic lens and said metal substrate to contain said LED chip, said gold wire and part of said metal base, and is filled with a silicone resin.

18. (Previously presented) The light-emitting diode for large current driving according to claim 2, wherein:

said metal base is attached to said metal substrate by means of caulking or press fitting;

said metal base is composed of copper;

said metal substrate is composed of copper or aluminum;

a space is formed on a rear of said plastic lens and between said plastic lens and said metal substrate to contain said LED chip, said gold wire and part of said metal base, and is filled with a silicone resin.

Application No.10/659,062
Filed: September 10, 2003
TC Art Unit: 2879
Confirmation No.:3830

19. (Previously presented) The light-emitting diode for large current driving according to claim 18, wherein at least one through hole is formed at a location in said metal substrate which a location corresponds to that of said space, and said silicone fills said space through said through hole.